

MOLLUSCA FROM VERMILION AND PELICAN LAKES, MINNESOTA, WITH THE DESCRIPTION OF A NEW VARIETY OF *HELISOMA CORPULENTA*BY FRANK COLLINS BAKER¹*(Continued from page 97)*

Helisoma corpulenta (Say). Since Thomas Say described this species in 1824 it has been generally misunderstood by the majority of students, owing principally to its rarity. In 1900 (NAUTILUS, XIII, p. 133) Walker redescribed and figured the species, thus placing it as a distinct member of the American fauna. Probably no more distinct species of the Planorbis group is known. In Grant's list it is included as a distinct species with the note "This shell seems to be quite distinct from *H. trivolvis* Say."

The typical form has the whorls carinated above and rounded or sub-carinated below and the axial height is not noticeably great. Say's specimens came from Winnipeck River, Winnipeck Lake, Lake of the Woods, and Rainy Lake, all in Ontario, Canada. Three specimens from Rainy Lake are figured in the writer's Monograph of Wisconsin Fresh Water Mollusca, pl. xix, received from Judge F. R. Latchford. Dr. A. R. Cahn, of the Department of Zoology, University of Illinois, also found the typical form in Fall Lake, near Winton, St. Louis Co., Minn., and in Trout Lake and Kawnipi Lake, Ontario. All of these conform to the diagnosis of Say and are like the specimens from one of the type localities, Rainy Lake. The Lake Vermilion form appears to be a variation from this typical form and is distinct enough to constitute a recognizable variety or race. It may be characterized as follows.

HELISOMA CORPULENTA VERMILIONENSIS nov. var.

Walker, Nautilus, XIX, p. 136 (part), pl. iii, figs. 3-7, 1900. Grant, 16th. An. Rep. Geol. & Nat. Hist. Surv. Minn., p. 484, 1887.

Shell differing from typical *corpulenta* in having the whorls at the shoulder and base encircled by a sharp, cord-

like carina which persists to the aperture both above and below, the spire is much flatter, the umbilicus much flatter and relatively deeper with the penultimate whorl sunk below the last whorl to a greater extent than in the typical form; the axial height is greater and the aperture is longer and narrower and peculiarly effuse and expanded below; the body whorl is much more flat-sided in the variety, hence profoundly modifying the aperture in form.

L. 15.0; D. 21.5; Ap. L. 16.0; D. 12.0 mm. Type.

L. 14.0; D. 22.0; Ap. L. 15.5; D. 12.0 mm. Paratype.

L. 13.5; D. 17.5; Ap. L. 13.0; D. 9.5 mm. Paratype.

L. 12.0; D. 13.5; Ap. L. 11.0; D. 9.0 mm. Paratype.

L. 13.0; D. 13.5; Ap. L. 11.7; D. 7.0 mm. Paratype.

L. 8.0; D. 10.0; Ap. L. 7.9; D. 5.5 mm. Paratype.

L. 6.5; D. 7.0; Ap. L. 6.5; D. 4.0 mm. Paratype.

Type locality: Birch Point, Big Bay, Vermilion Lake, St. Louis Co., Minn.

Types: Baker Coll., No. 2040. *Paratypes:* Acad. Nat. Sci. Phil., No. 147370.

This variety of *corpulenta* occurs abundantly in Lake Vermilion on more or less exposed shores, in shallow water, on shingle or cobble bottom. In many places the bottom is fairly peppered with the shells. In the aquarium the animal crawls about with a rapid, gliding motion, examining objects with its long, filiform tentacles. The pseudo-branch is very large and protrudes as a rounded lobe from the left side of the body. The genitalia of both the typical form (Fall Lake specimens, collected by Dr. Cahn) and of the variety indicate that the species groups with *Helisoma truncata*, the praeputium placed on the gland sac near the lower part of this sac. (A paper on the genitalia and radula will be published in the Trans. Amer. Micr. Soc.) Grant records *corpulenta* as found in Vermilion Lake and all over St. Louis and Lake counties. It was personally found in all parts of Vermilion Lake, but whether the form found in other lakes is the typical species or the variety *vermilionensis* cannot be determined without an examina-

tion of specimens. Cahn's records from Fall Lake, Minn., and Trout Lake, Ontario, are based on the typical form. As it has not been found in Wisconsin as far as known it would appear to be a species of the Hudson Bay drainage. Walker's Michigan reference needs confirmation by the discovery of authentic material from the Upper Peninsula. Apparently wherever this species is found it is abundant and seems to replace the larger species in the lakes in which it lives.

Helisoma campanulata wisconsinensis (Winslow). Shore debris on Birch Point, Big Bay and Daisy Bay. Immature individuals were found in Daisy Bay on Potamogeton. The *campanulata* of the lake are small but appear to be referable to *wisconsinensis* rather than to *davisi*. Similar specimens occur with the large form in Tomahawk Lake, Wisconsin. Recorded by Grant as *Planorbella campanulata*.

Planorbula crassilabris (Walker). Daisy Bay, on rocks in shallow water, near shore. Not abundant. Recorded by Grant as *Segmentina armigera* Say.

Menetus exacuus (Say). Recorded by Grant from Vermilion Lake. This might have been the race *megas* Dall, which is a northern form.

Gyraulus deflectus (Say). Recorded by Grant from all of the lakes of St. Louis, Lake and Cook counties. Not found by the writer.

Gyraulus circumstriatus (Tryon). A single specimen of this little-known species occurred in a marsh behind beach, Birch Point, Big Bay. The spiral striation mentioned by Tryon is very distinct. See Baker, Mon. Wis. Moll., I, p. 378, for a discussion of the status of this distinct species.

Gyraulus umbilicatellus (Ckll.). Swamp, behind beach, Birch Point, Daisy and Big Bays. Rather common, but smaller than specimens from Wisconsin.

Ferrissia parallela (Say). Daisy Bay, on Potamogeton, water 8 feet deep. Typical and common.

Ferrissia tarda (Say). Along shore of Birch Point on both the Daisy Bay and Big Bay sides. Always found on

rocks, usually small boulders or large pebbles, in shallow water, associated with *Helisoma corpulenta*, *Planorbula crassilabris*, *Ferrissia tarda*, and *Physella sayii*.

Physella sayii (Tappan). Daisy and Big Bays, on rocks near shore, in shallow water. Also found on Potamogeton in Daisy Bay, water eight feet deep. Recorded by Grant as *Physa gyrina* Say. All specimens collected were immature and mostly very narrow; no adults were observed in shore debris. This form was at first thought to be a northern variety, but an examination of radula shows that it is immature *sayii*, the teeth being exactly like those of undoubted *sayii* from Lake Winnebago, Wis. Examination of the radula with higher powers than previously available (900 diameters) shows that the figure in the Monograph of Wisconsin Mollusca, I, p. 432 is slightly inaccurate. The first lateral has very small intermediate cusps between the three inner large cusps, and the second to sixth lateral has these small intermediate cusps between the four inner larger cusps. Otherwise the published figure is correct. In the Lake Vermilion specimens there are 120-1-120 teeth in a row. It is evident that to satisfactorily identify Physae the radula teeth must be examined, for the shell has an exasperating way of resembling other totally distinct species. The genitalia (comparative length of male organ) will also help.

Aplexa hypnorum (Linn.). In swampy area behind beaches on Birch Point, on both Daisy Bay and Big Bay sides. Recorded by Grant.

Carychium exile canadense Clapp. Under logs and wet leaves, Birch Point. Not common. Grant lists *Carychium exiguum* (Say), but his specimens may have been *canadense*. No *exiguum* were found by the writer.

Land Species

Land mollusks were abundant in wooded areas all over Birch Point under logs, leaves, branches, and every sort of debris. Singularly enough, none of the larger species, such as *Polygyra* and *Anguispira*, were found, although diligent

search was carried on for them. The smaller species were so abundant that as many as 50 specimens of five or six species were often found under one log. Grant records *Anguispira alternata* (as *Patula*) from Tower, and it certainly should be found somewhere about the lake.

Vallonia gracilicosta Reinh. Probably the *V. pulchella* recorded by Grant. The fine, crowded ribs are differently arranged from those of *costata*.

Cochlicopa lubrica (Müller). Recorded by Grant as *Ferussacia subcylindracea*. Not found by the writer.

Vertigo gouldii (Binney). Not common. Only seven specimens found during two weeks collecting. The specimens are rather smaller than those from Maine and other places, the largest being 1.6 mm. long.

Strobilops virgo (Pilsbry). Very abundant and typical. Probably the *labyrinthica* recorded by Grant from Tower. *Virgo* is as a rule a more northern species than *labyrinthica*.

Acanthinula harpa (Say). Recorded by Grant from Tower. Not found by the writer.

Succinea retusa Lea. Common near shore of Daisy Bay.

Helicodiscus parallelus (Say). Apparently rare. Recorded by Grant from Tower.

Gonyodiscus anthonyi (Pilsbry). Abundant. Listed as *striatella* by Grant from Tower.

Anguispira alternata (Say). Listed from Tower by Grant.

Agriolimax campestris (Say). Common under logs.

Zonitoides arborea (Say). Abundant.

Euconulus fulvus (Müller). Common. Recorded from Tower by Grant.

Retinella hammonis (Strom.). Common. Recorded by Grant from Tower.

Vitrina limpida Gould. Listed from Tower by Grant. Not found by the writer.

Fresh Water Mollusca from Pelican Lake, Crow Wing Co.

The material from Pelican Lake is contained in the W. A. Nason collection and was collected by Mrs. Edward Morton many years ago. The collection is small but seems

worthy of record, particularly as it contains an additional record of a recently described race of *Stagnicola*.

Anodonta grandis footiana Lea. The abundant species of small lakes. The majority are like those from the type locality in Lake Winnebago, Wis., but a few have a white epidermis.

Lampsilis siliquoidea rosacea (De Kay). The common *siliquoidea* of lakes, but on the whole more elongated than usual.

Sphaerium rhomboideum (Say). Rare.

Campeloma milesii (Lea). Apparently abundant in the lake. *Milesii* has thus far proven to be a lake form of *Campeloma*.

Amnicola limosa porata (Say). Apparently rare.

Stagnicola emarginata vilasensis F. C. Baker. An abundant species in this lake as in the northern lakes of Wisconsin. See NAUTILUS, XL, p. 82, for description of this race. Also Mon. Wis. Moll., I, p. 243, pl. xvi, figs. 21-26.

Stagnicola exilis (Lea). Common. The whorls are somewhat more rounded than is usual in this species.

Acella haldemanni ('Desh.' Binn.). One large specimen only in the collection.

Helisoma trivolvis (Say). Common and typical.

Helisoma campanulata (Say). Apparently rare.

Planorbula armigera (Say). Not common.

Gyraulus deflectus (Say). Form with bluntly angulated periphery. This has been confused with *obliquus* DeKay, but the blunt periphery merges into the acutely keeled periphery in any large series. *Obliquus* has the faint angulation below the center of the whorl, while in *deflectus* it is usually about at the periphery.